

THE RECENT INCREASE OF THE RARER NATIVE MAMMALS

I—INTRODUCTION

Reports from various sources indicate that several species of native mammals, long regarded as having become scarce, or even rare, are now entering a cycle of relatively greater abundance (cf. S. R. White on the Fat-tailed Dunnart, *W.A. Nat.*, vol. 3, 1951, p. 1). It is desirable to document this phenomenon as well as possible and the present series of reviews, from various districts in the South-west where competent observers are located, is intended as a first contribution in this field.

It will be noted from the several reports that the situation is not precisely the same everywhere, and, in fact, some observers have not found the fluctuations in certain species in their districts which appear to be evident elsewhere.

The increase in number of some species of the rarer marsupials has figured prominently in the quarterly reports of several of the Honorary Fauna Wardens who were first appointed last year under the terms of the Fauna Protection Act 1950. Two sets of reports have now been received (for the quarters ended, respectively, December 31, 1953, and March 31, 1954) and through the courtesy of the Chief Warden of Fauna (Mr. A. J. Fraser) a summary of the relevant data may be included in this section. The observers, though not trained naturalists, are practical men familiar with the situation in the bush over recent years, and their unsolicited opinions on the species they discuss have considerable value. The data are presented hereunder:

Numbat.—Most reference books suggest that this creature is a rarity and threatened with extinction. However, it has probably always been present in some numbers in the wandoo belt but latterly it has become more noticeable, indicating a strengthening of the population to a point where it may even be called a "common" animal in some localities. Honorary Wardens' reports are as follows: Drakesbrook ("I have seen only two in ten years"); Cuballing ("a small number of Numbats seen"); Narrogin ("I am very pleased to report that *Myrmecobius fasciatus* has been seen around here several times during the last few weeks"); Katanning ("a small colony of Numbats in the West Woodanilling area was reported to me several months ago"); Manjimup.

Possum.—The reduction in numbers of the Possum has been almost catastrophic. The last open season for commercial hunting was in 1941 (between September 15 and October 31, when royalty was paid on approximately 50,000 skins). Apart from that short season the species had been protected since 1932. Over large areas the animals seemed to have completely vanished. The recent reports indicate increases or re-appearances in the following districts: Mt. Marshall; Drakesbrook (in the Darling Range area); Beverley ("increasing in the Avon Valley and some farms west;

have noticed quite a number killed on roads between Northam and Narrogin; ten years ago would hardly see any traces of Possums"); Narrogin ("this species is definitely showing an improvement"); Cuballing ("have increased in numbers on western side of railway"); Wickepin ("a few have been seen lately, but it is the first for some years"); Kulin; Upper Blackwood; Manjimup.

Quokka.—Two reports of the re-appearance of the Quokka are reported: from Yarloop (in the Darling Range, "Quokka seems to live here in the swamps, seen occasionally, but plenty of signs in all swamps"), and Manjimup ("Some months back observed a dead Quokka near Broke Inlet turn-off, the first seen or heard about for ten years"). S. R. White (*W.A. Nat.*, vol. 3, 1952, pp. 101-103) has discussed the status and decline of the Quokka in the South-west over recent years.

Brush-Wallaby.—Though not rare in the usually accepted sense, this wallaby had over recent years declined noticeably in numbers (cf. Bruce Shipway *W.A. Nat.*, vol. 1, 1947, p. 19). Several Wardens now report that this tendency has been reversed. Districts reporting an increase are: Geraldton ("there are a few Brush Kangaroos on the sandplain; I have not seen them for years until the last twelve months"); Gingin ("seem to be increasing"); Drakesbrook ("becoming plentiful in the timber areas east of Waroona"); Beverley ("slightly increased"); Cuballing ("quite numerous on the western side"); Narrogin; Katanning ("fairly numerous in a number of patches of bush west and south of Woodanilling; several residents consider they are increasing"); Cranbrook ("a few appearing after being absent for years"); West Arthur ("a few about, these seem to be on the increase"); Bridgetown ("for years I thought the Brush had either died out or been killed out by foxes, but I have seen quite a number of late between Bridgetown and Augusta"); Albany; Kulin ("many years ago Brush were very plentiful on the sandplain in the Kulin area but from 1938 onward they decreased; in 1950 they once again started to increase"); Esperance ("increasing").

—D. L. SERVenty

II — RECORDS FROM THE W.A. MUSEUM

The present status of our marsupial fauna is not easily ascertained, firstly because so many forms are crepuscular or nocturnal, and secondly because the arrival of material at the Museum is governed by so many factors. The finders may consider the specimen so common that it is not worthwhile to send it to the Museum, means of transport may not be available or the finder may not be in any way interested. Further, propaganda in the press or over the air may increase interest for a season and this is bound to decline sooner or later.

For instance, twenty years ago large numbers of small marsupials reached the Museum, far in excess of those received either earlier or later.

The clearing of the land also plays an important part in bringing the animals under the notice of the clearers or the settlers in adjacent areas to which the animals have fled because of the destruction of their habitat.

In the following account comparisons have been made between the material received at the W.A. Museum during three-year periods, successively ten years apart. These are 1922-24, 1932-34, 1942-44 and 1952-54 (to September 1954).

The Mardo is now very rare, or even extinct, as no specimen has reached the Museum since 1939. The Dibbler is not represented in the Museum's collection of small marsupials, the three specimens mentioned by Shortridge (*Proc. Zool. Soc. London*, 1909, p. 840) proving to be the Mardo.

The Wambenger is more than holding its own in the South-west, the 10 specimens recorded during 1952-54 show that it is to be found in many parts from Kalamunda in the north to Capel, Yornup and Margaret River in the south. In the 1942-44 period 5 were received; in 1932-34 there were no less than 12, and in 1922-24 only two. The Red-tailed Wambenger still exists in the southern Wheat Belt. Three specimens were collected (in the Kulin-Pingrup area) in 1952-54; two were recorded during 1942-44; one only in 1932-34, and none in 1922-24.

The Dunnart appears to be declining, one specimen (from Albany) reached the Museum in 1952-54; there were 12 in 1942-44; 12 in 1932-34, and 17 in 1922-24. The Fat-tailed Dunnart was far less in evidence in 1952-54 as only one specimen was received. On the other hand there were 10 in 1942-44; 14 in 1932-34, and four in 1922-24. This may not be a true picture of this useful little animal's status as official propaganda has been conducted on its behalf. The much rarer Granule-footed Dunnart has not appeared at the Museum since 1939, when specimens were received from Kulin and Marvel Loch.

It may be added that in the Museum's collection are two specimens of the Jerboa-Marsupial, a male and a female caught near Lake Grace in 1936 and 1939. They probably represent the species *Antechinomys lanigera* in Western Australia. The animal appears to be extremely rare.

The largest local Dasyurid, the Chuditch, still exists in various districts. Two specimens (from Carmel and Pingelly) reached the Museum during the 1952-54 period; one arrived in 1942-44; there were 11 in 1932-34, and two in 1922-24. From reports received the animal is today far more abundant than the low figures of Museum receipts would indicate.

No specimen of the Numbat was registered in 1952-54, though several living individuals had been offered and declined with the suggestion that the little animals should be liberated. In 1942-44 five were received; in 1932-34 there were six, and in 1922-24, two. There is satisfactory evidence that this animal is far from extinct, though rare or absent in many of its former haunts, probably because of the spread of agriculture and the clearing of the land.

Of the Peramelids the Quenda is the only species giving information. The specimens received indicate its presence at Gosnells and various places in the Darling Range near Perth. It appears to range as far south as Albany and inland to Kukerin and Nyabing. During the 1952-54 period 14 specimens were received; one in 1942-44; 10 in 1932-34, and one in 1922-24. In this case a gradual recovery seems to be indicated.

The Marl has not been recorded for 40 years. It was already scarce in the early years of the century when the able collector, Shortridge, obtained but a single specimen (from Woyaline Well, east of Brookton). The Dalgite seems to have died out. There are no reports of its presence anywhere within recent years. Probably the fox and rabbit fumigation are mainly responsible for the decline. In the 1922-24 period 7 specimens reached the Museum.

The Honey Mouse (or Noobenger) has recently been collected in many parts of the South-west from Serpentine to Albany and inland to Pingrup and Kukerin. During the 1952-54 period 15 specimens were sent to the Museum compared with 3 in 1942-44; 24 in 1932-34, and 4 in 1922-24.

The Mundarda, represented by 8 specimens during the period 1952-54, has a wide range in the South-west. Specimens show that it also exists as far inland as Nyabing and to Ravensthorpe in the south-east. In the years 1942-44 the tally was 19; in the 1932-34 period 21 were received, and in 1922-24 the number was 17.

The Possum, though not yet plentiful, still exists in the Metropolitan area and in many parts of the South-west. The Western Ring-tail has also been seen in a few localities in the lower South-west lately.

The small Macropods appear to have died out though there are persistent rumours that Bettongias have been seen here and there.

The Rock Wallaby manages to exist on some of the granite hills of southern Western Australia where the rocks at the base provide the animals' staple food. The closely related Hackett's Rock Wallaby is not in danger of extinction on the islands of the Archipelago of the Recherche, which have been gazetted a fauna reserve for its special protection.

The Quokka is still plentiful on Rottnest Island where it enjoys a certain amount of protection, on some islands off the south coast, and, it is said, in some swampy country of the lower South-west. The valleys of the Darling Range, in which the Quokka was once so abundant, have long been deserted by this interesting species. The Tammar is to be found on East Wallaby Island, of the Abrolhos Group; on Garden Island, and probably in some isolated area of the South-west mainland. It is some years since its skins appeared on the skin market. The Brush, which was becoming very scarce, is reported to be slightly more plentiful in certain portions of its range, in spite of the activities of "sportsmen."

The exact position of the three larger kangaroos, the Grey Kangaroo, the Red Kangaroo and the Euro (or Biggada) is difficult to evaluate. These animals increase slowly, having but one young at a time. However, there is definite evidence that they have increased during the last few years in certain areas. This may be more apparent than real when the status of the species is concerned, for the unusually dry conditions in many parts of the interior have driven the animals to seek refuge elsewhere where conditions are more favourable.

—L. GLAUERT

III — BAILUP (DARLING RANGE)

This brief note refers to the occurrence of some native mammals observed on my property of about 5,000 acres at Bailup, on the Toodyay Road, some 30 miles east of Perth. The area was under observation since 1945.

A permanent inhabitant is the Brush-Wallaby, which may be noticed in pairs, sometimes accompanied by a half or three-quarter-grown young. The animals can be flushed during the day, or if observation is required, can be watched in the early evening or morning as they feed and chase each other about. They haunt particular territories, which they seldom leave. If one is killed the remaining animal acquires a new mate very soon. A very rough estimate of the population of the property is at least 30 pairs. Prior to 1945 I had been absent from the Darling Range country since 1927, when I was located at Parkerville. In my opinion there has been no significant change in the status of Brush-Wallaby as between the two periods.

The Grey Kangaroo is seen in twos, threes and family parties. It would be a mere guess to attempt a census as the animals move about a good deal. I have seen as many as 20 in one morning, and sometimes one may walk all day and see none. Hunters, from the Perth metropolitan area mostly, take a heavy toll at weekends.

I have met with no indications of Possums. There are many signs of Echidnas and in 1953 one individual was seen. A species of small Bat is fairly common; when a large tree was cut down I counted no less than 23 small bats as they issued one at a time from a hollow spout and flew off.

—I. C. CARNABY

IV — PIESSE BROOK-BICKLEY DISTRICT (DARLING RANGE)

Recent observations indicate that there has been a decrease in numbers in the Black-gloved or Western Brush-Wallaby and an increase in numbers in the Western Forester or Grey Kangaroo in this district over the last few years. Over the same period there appears to have been a steep increase in the population of the Brush-tailed Phascogale or Wambenger. Apart from one of the Rat-Kangaroos (*Bettongia*), which was said to have been abundant in

the district in the early days of settlement but is now no longer seen, and of the Quokka which vanished from its gully haunts in these hills 30 years ago, others of our better known small animals appear to be holding their own at a fairly even population level.

The Echidna or Spiny Ant-eater is met with about as frequently, or infrequently, as it was in former years. Like the majority of our small native animals it is largely a night feeder and consequently it is not often encountered though it may be comparatively plentiful. Now and then it will be seen in the open during daylight, particularly on grey days, but it is more likely to be brought to notice by the activities of a dog at night. It appears to wander farther afield and to be more often met with in the month of June than at other times. Possibly its wanderings in that month are in search of a mate.

Records of it in recent years include one of June 2, 1950, when a dog had found one at about nine o'clock at night and attracted our attention by its excited barking. The little animal had succeeded in burrowing down amongst some stones, and continued to shift some earth with powerful movements of its fore limbs, but could not get far down for the rock. We tried to turn it out but, curving itself up into a spiny ball, it clung down with unbelievable strength and we failed to shift it. The dog had broken a few of its spines.

On June 13, 1951, the children of Piesse Brook School found one out in the open on the hillside above the school building during the day.

The most recent record I have is of June 11, 1954, when two dogs found one at dusk in the forest country east of Piesse Brook and had broken some of its spines, one of them, not as bush-wise as the other, receiving some nasty wounds in the face in the process when Mr. G. F. Parton came up with them. The Ant-eater had curved itself up into something of a ball and was clinging to the ground in typical manner. These notes point to about the frequency with which the animal comes under notice in the immediate neighbourhood.

The Phascogale or Wambenger has obviously experienced a period of comparative abundance in recent years, as formerly I had no record whatever of it occurring in the district. On December 3, 1949, Mr. Clements described to my wife an animal his cat had brought in the previous night, his detailed description leaving no doubt whatever that it was a Wambenger. He stated that the animal was quite new to him. Mr. Clement's home is in Hackett's Gully, about a mile east of Piesse Brook. This was the first report I had of the animal having been seen in the district.

A second report came when Mr. and Mrs. G. F. Parton encountered one when driving home along a bush track to the east of Piesse Brook at 1 a.m. on June 10, 1951. The animal ran across the track and leapt to the trunk of a banksia, going to the highest point of a broken limb but at once coming down again. It returned to the track and, apparently in no way disconcerted by the glare

of the headlights of the truck, cast about as though trying to pick up a scent trail and then concentrated on one spot at the side of the track. Mr. Parton got out of the truck to watch the animal more closely, but unfortunately his dog reared round and the Wambenger leapt to the bole of a jarrah and ran up out of sight.

Mr. Parton again saw one of the animals when returning home on foot by a different track towards dusk on the evening of March 20, 1952. It had apparently been on the ground and his attention was attracted by the noise it made in climbing a tree. It went up some distance and then crouched in a fork amongst some foliage, but he drove it higher. He said its action in climbing was quite smooth.

On April 6 of the same year he again encountered a Wambenger near this spot. On this occasion he was driving home at about 10 p.m. and once more the animal was startled from the ground. It at once ran up a small jarrah and when he shook the tree it made a whacking noise as though it was angrily beating its tail against a limb. Presently it ran out and leapt down from the limb it was on to the leafy part of a lower branch, from where it easily moved into a casuarina. He then lost trace of it. Possibly it leapt to the ground and went off.

Other reports came in. The head teacher at Piesse Brook School, Mr. C. Rose, found one of the animals dead on the road between the school and Kalamunda in 1952, and later the same year he saw another one when driving past the school at night, the animal on this occasion running from the road and leaping to the trunk of a tree. Mr. J. Rose also encountered one when driving at night less than a mile from the school. In the spring of 1953 my daughter Gretchen saw one that a cat brought in to Illawarra Orchard at Karragullen. From these reports it was clear that the Wambenger had become comparatively numerous in recent years.

The Western Native Cat or Chuditch continues to exist in the district in considerable numbers, coming to notice from time to time when it raids someone's fowl-roost or, more rarely, when one is killed on the roads. Mr. and Mrs. G. F. Parton had an interesting encounter with one in August, 1951 (*W.A. Nat.*, vol. 3, 1952, p. 93). In July, 1953, one paid a visit to my fowl-run on three successive nights, killing a fowl on each of its first two visits but being trapped and killed itself when it returned to the run the third time. It was a male in good condition and lacked a white tip to its tail. Its visit to the fowl-run on the third occasion was after 11 p.m. as the traps were empty when examined at that time. On each of its previous visits it had sucked the blood of its victim and had chewed off the head and discarded it, though it had eaten a portion of the breast. The Native Cat's raids on domestic fowls appear to occur rather more often on wild wet nights than at other times.

One of the few animals that appears to have suffered no notable reduction in numbers as a result of the varied hazards brought about by settlement is the Quenda or Southern Short-nosed Bandicoot. It seems remarkable that this little animal has been able to

survive in undiminished numbers where others, such as the Rat Kangaroos' and small Wallabies have met with disaster. About the outskirts of the habitations and throughout the forest country the pits dug by the Quenda in its search for insects and their larvae are extremely numerous. In some instances I have found where they have dug down to a species of fungus but have not been able to ascertain if this is what they were really after. The most remarkable concentration of Quenda diggings I have seen was found by my daughters in the autumn of 1952 when a party of us were out on the hills. This was in a comparatively bare area about two chains long by half a chain wide where twelve inches or more of gritty soil had found lodgment on a shelf of granite high on one of the hillsides. In it there were literally hundreds of fresh pits dug by these animals and in each case we found that the pit had been dug to unearth the cemented pupa cells of some insect, most of which had been broken up and the inmates devoured. Later some of the undamaged cells were sent to the Curator of the W.A. Museum, Mr. L. Glauert, and to him I owe thanks for the information that they were the pupa cells of a saw-fly. Insects of previous generations had used the same highly suitable spot in which to pupate for in many cases we found that the more recent cells had been built on the top of older ones. Actually the number of saw-fly grubs that had found their way to this particular small area to pupate was more remarkable than the number of pits dug by the Quenda to obtain the larvae. One marvels where all the insects came from.

My wife and I again visited this spot on June 11, 1954, but though it was obvious that many more pits had been dug since our earlier visit, very few were fresh. The area had been rendered rather unsuitable to the insects by the uprooting it had received.

On several different occasions Mr. G. F. Parton has drawn my attention to nests that we concluded were the work of these animals. One of these was a mounded structure built of sticks and leaves and other herbage and was situated in a tall thicket of *Bossiaea* in a low-lying area, but two others of similar composition were in hollows or excavations under the beards of low-growing blackboys and the flat tops of these were level with the ground.

The Quenda is sometimes seen in the daytime, but mostly only in a fleeting glimpse as it shoots across an open space or a hush track in front of one. Generally speaking it confines its activities to the hours of darkness.

The dainty little Mundarda or South-western Pigmy Possum I have seen only three times in 40 years' residence in the district, and not at all recently. However, it is so likely to escape observation that it could be present in considerable numbers and still be overlooked.

The Brush-tailed Possum has not been plentiful in the forest country hereabouts for as long as I can remember, though in the early days of settlement it was said to be abundant. Judging by its occasional appearance in fruit sheds and such places, but more particularly by its scratches and an occasional well-worn runway on forest trees, it is still present in moderate numbers.

The marked reduction in numbers noted in the Brush-Wallaby is not readily explained, as hunting and shooting, at any rate in the immediate district, appears to have been carried on to a less extent in recent years than it was formerly, a fact that might well account for the local increase in the Grey Kangaroo. Disease in some form is always a possibility and it is rather of interest that one of these wallabies was found dead in my orchard on May 2, 1949. The animal had suffered no apparent violence though it bled a little from the nostrils when moved. It was a doe and had a naked six-inch-long joey alive in the pouch. The Brush is inclined to be a solitary animal, but whereas one would start up three or four individuals in a mile walk through the bush a few years ago, at the present time the animal is only occasionally seen.

The Western or Sooty Water-Rat is still quite plentiful along local brooks, even in thickly settled areas. I have occasionally seen a Water-Rat out on a brook bank in daylight, but like many another this animal usually waits until the deepening of dusk before it ventures out from its retreats. The young Water-Rats appear to be born in the autumn, for one usually sees their tiny tracks in the mud silts along the water courses soon after the first heavy rains.

On July 9, 1949, Mr. J. McWhirter brought me one of these animals that a dog had killed some nights before. It was dark grey above with some blackish hairs, but was rather noticeably lighter below. Length from nose to tail tip was 22 inches, the head and body being about 12 inches. Barely an inch at the tip of the tail was white.

—W. H. LOARING

V — DRYANDRA FORESTRY STATION

Whether the district around the Forestry Department's mallet plantation at Dryandra is peculiarly favoured for the survival of native animals, or whether they are better known there than elsewhere because of the presence of interested observers, it is a fact that this is the best place near Perth for the study of several species of native mammals. At least eight species are known to occur there at the present time, and on recent visits I have seen seven of them. The local habitat is preserved and for many years there has been an absence of devastating fires through a policy of controlled burning in the cooler weather and continued vigilance. Furthermore, the local fauna is protected and the foresters are *ex officio* wardens.

Dryandra lies about five miles north-east of Congelin railway siding, 15 miles north-west of Narrogin, and 90 miles south-east of Perth. It is in the wandoo belt and may be described as being at the eastern edge of the Darling Range forest country.

Mr. G. E. Broekway, Regional Superintendent of the Forests Department, drew our attention to the interest of the district and piloted members of the Fauna Protection Advisory Committee through on October 30, 1953. That afternoon we saw four Numbats on the road from our vehicle. The first, at 5.45 p.m., dashed across into a fallen hollow wandoo log and three others were seen at 6

p.m. frisking around on the track ahead of us. With their tails elevated they looked remarkably like squirrels, the bristling hairs giving the tail a curiously feathered appearance. We were able to watch them for some moments before they darted into a hollow wandoo log and Mr. A. Douglas, of the Museum staff, approached them so closely that he could easily have caught one by hand. There is no doubt that, because of its bright colours, striking pattern and alert bearing, this must be one of the most attractive marsupials to watch in the field.

Through the kindness of Mr. Brockway I was able to visit the station again on March 22-23, 1954, with Professor G. A. Bartholomew, Jr., of the University of California. We saw two more Num-bats and Professor Bartholomew was able to handle one which we extricated from a hollow wandoo log.

At the fire observation hut, on Tower Hill, the lookout man, Mr. Frank Price, has the company on summer evenings of a few Tam-mars and a number of Woilies, locally called Boody Rats. These appear around his campfire from about sunset and remain for an hour or so, feeding on scraps of bread, etc. They do not come around in the mornings. He counted 17 of them on one occasion. On the evening we watched them we were impressed with their extraordinary tameness. They hopped around like miniature kangaroos, coming close to us for the pieces of bread scattered about. They were not disturbed at all by conversation and appeared similarly heedless of the light of electric torches. Occasionally they would give a sharp little grunt, at which others in their vicinity would jump away in alarm. Some of the little animals came to drink at a small puddle from the waste water from the hut. That night we went "spot-lighting" for mammals through the mallet plantations with Mr. John Currie, District Forester in charge of the station. We saw a Brush-Wallaby, one Woilie and several rabbits.

Mr. Currie informed us that Quendas (locally called "wild pigs") occurred in the area, and Mrs. Currie gave us a native mouse (*Pseudomys* sp.) caught in a pollard bin.

A few days later, on March 28, I revisited the area with my wife and Mr. J. H. Calaby. Though looked for, we did not see any Num-bats on this occasion. In the evening we watched the Woilies at Tower Hill. They first appeared at 6.30 p.m. and remained until 7.45 p.m. (sunset locally was at 6.19 p.m.). About a dozen of them came around the camp-fire; some had heavily-laden pouches. With them, but remaining rather in the background, were two Tam-mars, and one large Brush-tailed Possum. All three species showed a fiery-red eye-shine, like a glowing ember, when the torch was flashed into their eyes. On the run home, in the Congelin area, another Possum and a Woilie were seen and two small mammals, grey and mouse-sized, crossed the road. During the day three Great Grey Kangaroos were encountered. Kangaroo faeces were plentiful and there were many Possum faeces under some of the wandoos, which carried Possum scratches.

—D. L. SERVENTY

VI — NYABING-PINGRUP

Several writers have referred to fluctuations in our bird populations when after periods of scarcity there followed, not the feared extinction, but a wave of plenty. That such a wave is on us now in respect to some native mammals is suggested by local records.

Even large animals like the Great Grey Kangaroo have figured in the increase. In this district the early settlers (1900 onwards) reported the sighting of a Kangaroo as an event; today the animals are so numerous that they are considered vermin. One might ascribe the increase to man-made changes in the environment and put it down, in this case, to extensive wheat plantings, but the increase in Kangaroos is general even in the forest country of the extreme South-West.

The lesser marsupials, frequently little known to laymen even in periods of comparative plenty, are apparently on the way back. In early clearing operations, at some time or another, most of the small bush denizens might be encountered, yet here they are appearing in older and more established areas. In the Kent Road Board district farmers are reporting small mouse-like creatures in increasing numbers.

Fat-tailed Dunnarts are often seen at night, by shooting parties spotlighting for foxes, sitting up like miniature kangaroos. From Pingrup have come several specimens of Jerboa-Marsupials, and an unidentified native rat is now in the W.A. Museum. The Red-tailed Wambenger, when introduced to the crowded bar of the Nyabing Inn, caused animated discussion and indeed argument. This was the third of these small carnivores to be taken by that enemy of all small creatures, the domestic cat, in a few weeks. Few, if any, of the local farmers could remember having previously seen this species.

When the first Chuditch came into my possession, for mounting in the school museum, I asked Mr. J. Cuiss, long-time custodian of the Rabbit Proof Fence, from Nyabing to Point Ann, when he had seen his last specimen of "native cat." His answer highlights the wave of plenty theory. He said that had he not caught one in a dog trap the day before he would have had to say "about fifteen years." Some weeks ago a local resident returning from Perth at night disturbed a Chuditch eating a rabbit in the middle of the road (on the Albany Highway, approximately at Bannister).

Numbats are often seen by children travelling to school south of Nyabing and two specimens have been caught and handled this year.

Along the Rabbit Proof Fence frequent unmistakable diggings indicate the presence of the Quenda, and on more than one occasion the writer has seen paw prints and tail marks that may have been those of the Dalgite. Since he had not seen either animal or print in the previous twenty years, his memory may be at fault.

The dainty little Honey Mouse is often reported from the sand-plain and one survived for almost a year in captivity. Clearers frequently come on the Mundarda, and others have found the typical

"green leaf collection" nest in hollow York gums, mallets and morrels. Several pairs have been kept in captivity with varying success and their current frequency is such that when a captive couple was shown to Mr. V. McDougall, the local honorary fauna warden, he decided he would like some. The same afternoon he had two males and a female carrying pouched young to show for his bushmanship.

Possums are not over-plentiful in this area but there is no outright scarcity. In some places where clearing has removed the normal arboreal dwellings Possums have taken to rabbit warrens and there are frequent reports of their being trapped on burrows.

At the depot hut at Point Ann, Mr. Cuiss turns on his radio, and through the open door comes a Kangaroo-Rat (*Bettongia* sp.) for its evening meal of food scraps. The hut is unoccupied for weeks, but over the last few months the little animal has never failed to put in his appearance.

Tammaras are still comparatively common in moort (*Eucalyptus platypus*) thickets but judging from local reports are not as plentiful as formerly. However, these views may be regarded with caution since the local farmers are apt to regard an absence of marsupials from old and favoured haunts as an indication of extreme scarcity whereas it may simply indicate a change of occurrence by a few miles. Tammar are at any rate sufficiently plentiful in certain parts of the district for them to be seen in groups of six or seven with the aid of a spotlight.

Brush do not appear to be as plentiful as they were a couple of years ago. It was then a local impression that they were on their way back but for the past twelve months or so I have not recorded them as more than ordinarily abundant.

—R. AITKEN

VII — MANJIMUP

I believe that a surge of prosperity has come to many of our smaller marsupials, and although I have lived here for twenty years—arriving just as the Possum and the Quokka were on the way out—it is only within the last two or three years that I have made the acquaintance of many of the smaller forms for the first time. I have been steadily building up contacts among the original settlers and pioneer stock—men who were born here when the place was a wilderness of forest—and the result is amazing and gratifying. I now have a circle of scouts of undoubted knowledge and ability to read the bush and its ways, people with powers of observation backed with a lifetime of natural interest, many of them with a deep love of all our native things, and all of them with a keen desire to bring me their findings and to talk of their information.

It appears fairly definite from reports over a lengthy period that a pocket bounded by the Tone and Perup Rivers and northward to Lat. 34° 12' is rich in small marsupials and may well be the local nursery from which this promising flush has its origin. Tammar, Quokka, Brush, Woillie, Numbat and Chuditch are recorded in this

area. Attention could also be given to the thought that our native mammals are only now recovering from the impact of the fox, as there is some significance in the fact that the larger marsupials have not suffered a recession to the same extent as the smaller mammals.

Records of local occurrences are as follows:—

Wambenger.—In October, 1944, a specimen was killed on the road at Middlesex, eight miles south of Manjimup. In January, 1953, another was found on the Pemberton Road five miles south of Manjimup. On April 20, 1954, a live male was received from Frank Angus, at Diamond Tree, ten miles south of Manjimup. On June 12, 1954, a dead male was found on the road close to Manjimup.

Chuditch.—Frank Hunter saw one at Mordallup on April 11, 1954.

Numbat.—On January 23, 1953, a male specimen was caught by Mr. Butler at Corbalup Swamp, 10 miles east of Manjimup (released). On March 24, 1954, Frank Hunter took a female with four young in the Lake Muir area. It was inspected by A. R. Main, photographed by S. R. White and later released.

Quenda.—There is a permanent population one mile north of Manjimup and again three miles west of Manjimup. On July 13, 1952, I received a male specimen alive and uninjured from M. Hind, owner of the latter area. On July 19, 1952, I received another male from Mr. Hind, damaged and dead; taken away by Major Whittell.

Mundarda (Pigmy Possum).—On November 10, 1953, a female, with four young, was sent in to me by Hubert Jay, Pemberton; it had been brought in by mill workers.

Possum.—On June 14, 1952, I noted the first record, for 12 years, of a Possum being caught in a rabbit trap.

Wollie.—I received a pair from Frank Hunter who obtained them at Mordallup on April 12, 1954.

Quokka.—A small macropod of this type was seen at Muddyboo, two miles north of Manjimup, on June 8, 1952, but was not positively identified. Norman Muir has seen Quokka 10 miles north of Mordallup. Norman Woods reported a small wallaby at Broke Inlet. For some time now I have been working on the extent of the penetration of the Quokka and it is my opinion that it went as far as the Frankland River to Lat. 34° 30', and a report recently gave one identified by a reliable observer at Lat. 34° 12', a few miles west of the Frankland.

Tammar.—Mervin Muir stated (April, 1954) that there was a small colony at Mordallup. There were definite traces of either Quokka or Tammar at Glenoran.

Brush.—Norman Muir reports (April, 1954) that it is steadily becoming more plentiful and moving gradually westwards; it is seen in districts from which it has been absent for many years. It is reported to be plentiful in areas being bulldozed at Rocky Gully.

—A. D. JONES

VIII — APPENDIX — SCIENTIFIC NAMES

The scientific names of the mammals referred to in the preceding reports are as follows:—

MONOTREMATA:

Family Tachyglossidae:

Echidna or Spiny Anteater, *Tachyglossus aculeatus*.

MARSUPIALIA:

Family Dasynridae:

Mardo or Yellow-footed Marsupial-Mouse, *Antechinus flavipes*.

Dibbler, *Antechinus apicalis*.

Wambenger, *Phascogale tapoatafa*.

Red-tailed Wambenger, *Phascogale calura*.

Fat-tailed Dunnart, *Sminthopsis crassicaudata*.

Dunnart, *Sminthopsis murina*.

Granule-footed Dunnart, *Sminthopsis granulipes*.

Jerboa-Marsupial, *Antechinomys laniger*.

Chuditch or Western Native Cat, *Dasyurus geoffroyi*.

Family Myrmecobiidae:

Numbat or Banded Anteater, *Myrmecobius fasciatus*.

Family Peramelidae:

Quenda or Short-nosed Bandicoot, *Isodon obesulus*.

Marl or Western Barred Bandicoot, *Perameles myosura*.

Dalgite or Rabbit-eared Bandicoot, *Macrotis lagotis*.

Family Phalangeridae:

Honey Mouse or Noolbenger, *Tarsipes spenserae*.

Mundarda or South-western Pigmy Possum, *Cercartetus concinnus*.

Western Ring-tail, *Pseudocheirus occidentalis*.

Kumarl or Brush-tailed Possum, *Trichosurus vulpecula*.

Family Macropodidae:

Woolie or Brush-tailed Rat-Kangaroo, *Bettongia penicillata*.

Rock Wallaby, *Petrogale lateralis*.

Hackett's Rock Wallaby, *Petrogale hacketti*.

Quokka, *Setonix brachyurus*.

Tammar, *Macropus eugenii*.

Brush-Wallaby or Black-gloved Wallaby, *Macropus irma*.

Western Great Grey or Forester Kangaroo, *Macropus ocydromus*.

Red Kangaroo, *Macropus rufus*.

Biggada or Euro, *Macropus robustus*.

MONODELPHIA:

Family Muridae:

Western or Sooty Water-Rat, *Hydromys fuliginosus*.